DOCUMENT RESUME

ED 138 439 SE 021 568

TITLE	Educational Programs That Work - A Technical Brief. Academic Advancement Program: Mathematics.
INSTITUTION	Morris School District, Morristown, N.J.; New Jersey State Dept. of Education, Trenton. Div. of Research, Planning, and Evaluation.
SPONS AGENCY	Bureau of Elementary and Secondary Education (DHEW/OE), Washington, D.C.
PUB DATE	[76]
NOTE	7p.; For related documents, see SE 021 566-567
EDRS PRICE	MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS	*Curriculum; *Elementary School Mathematics; Elementary Secondary Education; Evaluation; *Individualized Instruction; Instruction; Mathematics Education; *Program Descriptions; *Secondary School Mathematics
IDENTIFIERS	*Academic Advancement Program Mathematics

ABSTRACT

This pamphlet gives an overview of the Academic Advancement Program - Mathematics, briefly explains the instructional management system of the program, and discusses the goal of the program and results of evaluation. (DT)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

EDUCATIONAL PROGRAMS THAT WORK - A TECHNICAL BRIEF

ED138439

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

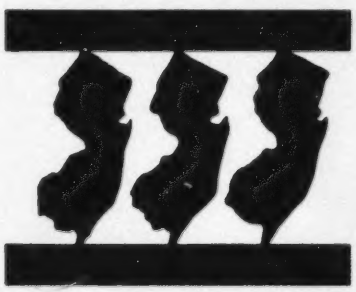
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

- GRADES SIX THROUGH EIGHT
- HETEROGENEOUS GROUPING
- INDIVIDUALIZED, PERFORMANCE-BASED INSTRUCTION
- SELF PACED LEARNING
- CLASSROOM ORGANIZATION
- REMEDIATION GRADES NINE THROUGH ELEVEN

ACADEMIC ADVANCEMENT PROGRAM: MATHEMATICS
Morris School District
MORRISTOWN, NEW JERSEY

ESEA – TITLE III-IV(C)

ESEA



DIVISION OF RESEARCH, PLANNING & EVALUATION
NEW JERSEY STATE DEPARTMENT OF EDUCATION
October, 1975

SE 021 568

ACADEMIC ADVANCEMENT PROGRAM

MATHEMATICS

OVERVIEW

The Academic Advancement Program: Mathematics (AAP) is an individualized instructional program for grades six through eight that can be used for remediation in grades nine through eleven. Designed as an alternative to homogeneous grouping, it seeks to find a solution to a serious problem that arises when a school district, using homogeneous classes, discovers that it is outwardly desegregated but the classrooms are models of minority group isolation.

Educators recognize two major problems facing American education: 1) meeting the educational needs of individual students; and 2) achieving social integration. Grouping by skill level, adopted as the best means to serve the first ideal, has worked against the second ideal in a community of cultural and racial diversity because it discourages social integration; burdens students assigned to some groups with resentment and humiliation; and fosters in these students unfavorable self concepts.

The AAP has developed an instructional system that serves these two ideals in that it allows for individualized, self paced instruction within a heterogeneous classroom. In its three years of operation the students in the program not only have achieved cognitive growth at the same level as students from ability grouped classes, but have demonstrated a trend toward positive significant difference and in some areas positive significant difference was noted. The program has been validated as successful, cost effective, and exportable by the standards and guidelines of the United States Office of Education.

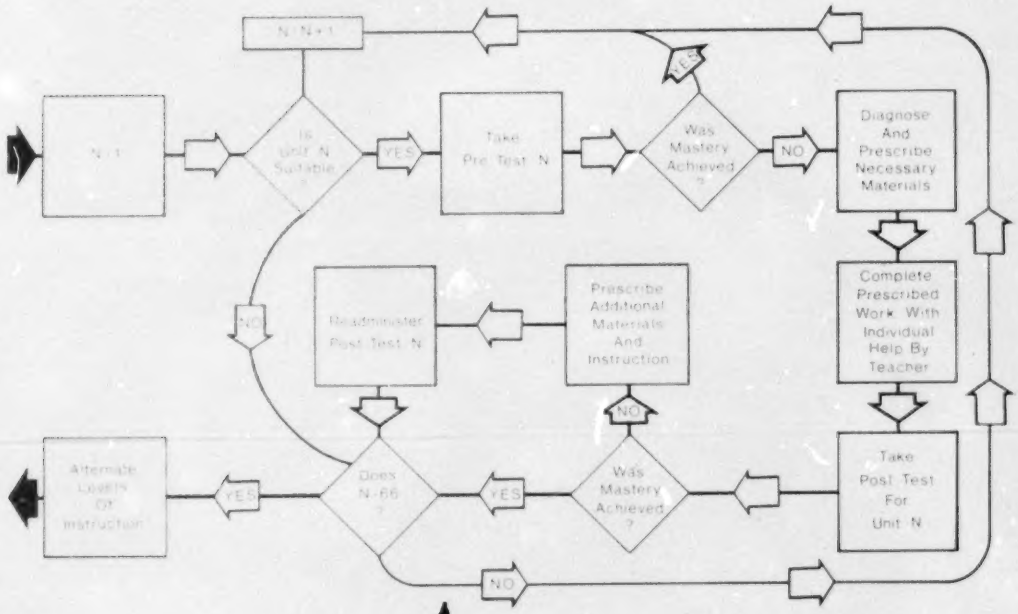
The AAP is defined by individualized, performance based, self paced instruction following the precepts of mastery learning. The mathematics portion of the program is based on a sequential hierarchy of basic skills to accommodate a wide range of skill levels. The learning materials used, commercially produced, have been reassembled into skill sequences adapted to meet the needs of heterogeneously grouped students. Students can move from one set of materials to another on one skill level or upward as skill mastery is displayed. Within one AAP classroom it is possible to find twenty or more students all working at different skill levels.

The essential elements of the Academic Advancement Program-Mathematics are divided into two categories, based upon their concern either to the classroom teacher or to the administrator or project director of the program:

CLASSROOM TEACHER	ADMINISTRATOR
1. Learning Materials 2. Instructional System 3. Monitoring System 4. Storage System for Materials 5. Classroom Organizational System 6. Use of Paraprofessionals	1. Staff Selection 2. Supervision and Staff Support 3. Evaluation 4. Expansion and Refinement of the Program in the District

The AAP mathematics program consists of sixty-six units each containing precise instructional objectives with test items for each objective. The program covers a mathematics skill sequence from operations with whole numbers to roots, radicals and quadratic equations. The student works within these units in a precisely managed system of instruction.

FLOW CHART OF INSTRUCTIONAL MANAGEMENT SYSTEM



To complement this instructional program a monitoring system was also developed which allows a teacher to record graphically what each student has completed at any point in time. The student knows precisely what he or she has accomplished and what learning task must be done next.

The AAP management-monitoring system, not a time consuming task, facilitates responsiveness of the teacher to the individual progress of each student. It identifies those students who have not yet mastered particular objectives; identifies areas of need; and directs the teacher toward the proper instructional decision.

The development and dissemination of this project have been funded through the New Jersey Elementary and Secondary Education Act, Title III-IV(C) Program. It has been validated as successful, cost effective and exportable by the standards and guidelines of the U.S. Office of Education.

GOAL, EVALUATION DESIGN AND RESULTS

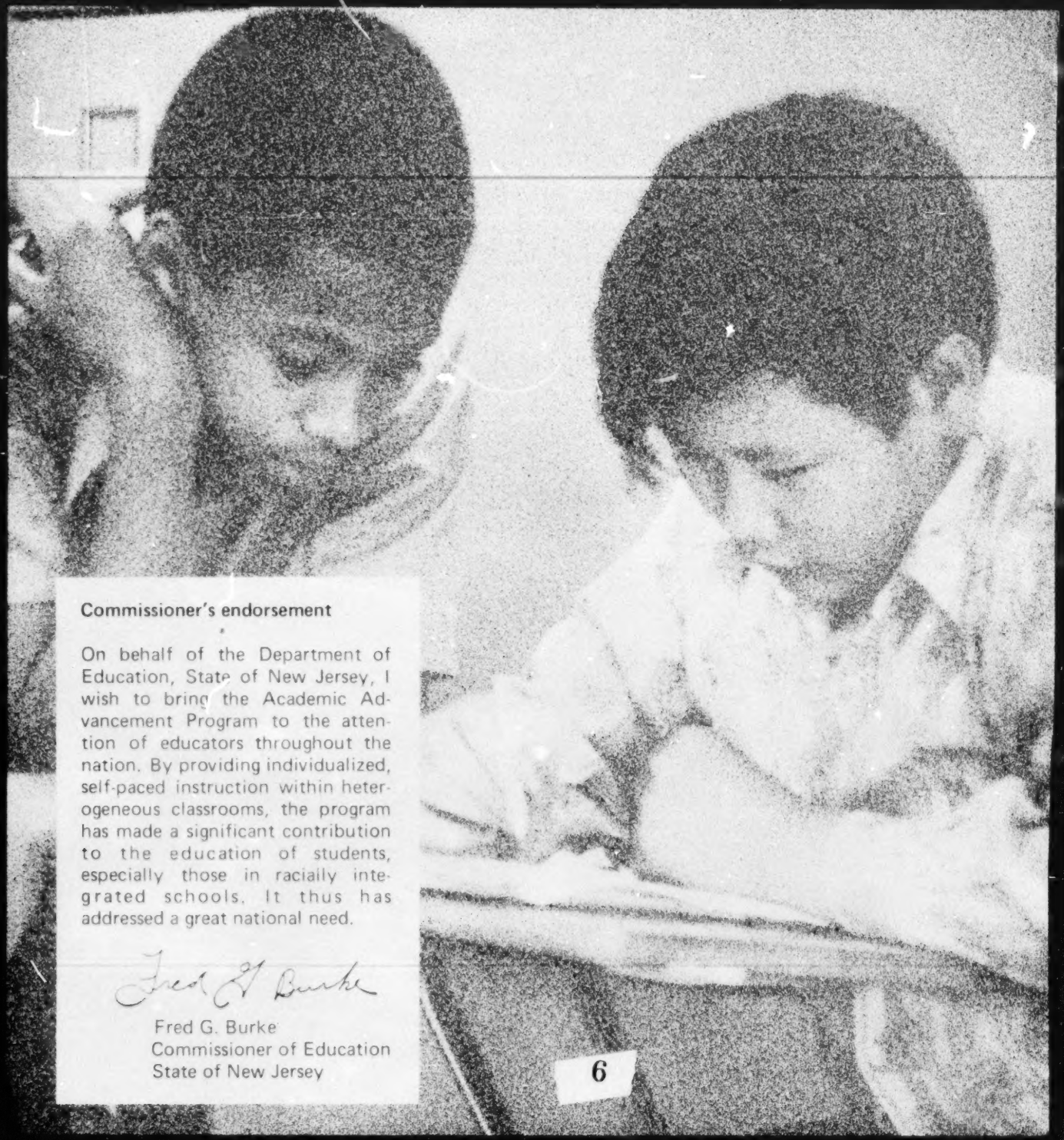
The AAP goal was to disprove the major assumption of proponents of skill grouping that separation enhances student progress. Evaluation was based on 200 students in grades 6-8.

Goal

To show that learning in mathematics is not adversely affected when classroom organization is changed from homogeneous group instruction units to individualized instruction in heterogeneous units.

The Iowa Test of Basic Skills (1971 edition) is used in the district-wide testing program, administered at a prescribed time under standardized conditions. There are two subtests (Mathematics Concepts and Mathematics Problem Solving); a total mathematics score is also reported. Results showed that the AAP group and control group were not significantly different on the pretest or posttest. A subgroup comparison was made on above grade level students in both the AAP and control group. Again, no significant difference was discovered. In both cases there was a strong trend toward positive significant difference in the AAP's favor.

The test results supported the hypothesis that heterogeneously grouped students in an individualized instructional setting are not penalized in achievement. This finding holds true for the superior students in that their achievement is not impeded in a heterogeneous setting.



Commissioner's endorsement

On behalf of the Department of Education, State of New Jersey, I wish to bring the Academic Advancement Program to the attention of educators throughout the nation. By providing individualized, self-paced instruction within heterogeneous classrooms, the program has made a significant contribution to the education of students, especially those in racially integrated schools. It thus has addressed a great national need.

Fred G. Burke
Commissioner of Education
State of New Jersey

Dissemination Services

The Academic Advancement Program provides orientation presentations, visitation opportunities, dissemination materials and training services to interested educators. General information may be secured upon request. A four-day training program with follow-up consultations is available free of charge to school districts that sign a commitment to replicate the program's essential elements. Consumer districts are requested to register one administrator with the teachers selected for the training.

Materials

The program's curriculum materials may be purchased at cost. These include a Replication Manual for the Classroom Teacher, an Administrator's Guide, a Training Manual, and a filmstrip tape presentation. A descriptive project report, order forms for the manuals and the Producer-Consumer Agreement required for training and consultation services may be obtained from the Project Director.

COSTS

The orientation, training and consultant services provided by the AAP staff to consumer districts are free of charge, funded by ESEA, Title III-IV(C). Consumer districts are responsible for costs incurred by their staffs for training and the installation of the program. The initial acquisition of materials may cost as much as ten dollars ($10.00) per student, dropping after the first year to about five dollars ($5.00) per student thereafter. Storage facilities, a very necessary part of the program, should cost no more than $200 per classroom. These constitute an initial start-up investment. Aides are necessary for the teacher to get the program started. One aide serves 2 teachers and approximately 200 students in a departmental situation; in a self-contained classroom, aide service can be part-time for the period assigned to mathematics. As a smooth pattern of classroom activity is achieved, the need for the aide diminishes, since many of her tasks can later be accomplished by the teacher or the students themselves.

CONTACT PERSON

Joseph H. Dempsey, Director
Academic Advancement Program
Morris School District
40 Mills Street
Morristown, New Jersey 07960
(201) 539-8400, ext. 421